CLASS I NON-HAZARDOUS PERMIT APPLICATION FOR PROPOSED BDW-1 THROUGH BDW-5 WOODHAVEN TERMINAL, WAYNE COUNTY, MICHIGAN

BUCKEYE TERMINALS, LLC

PROJECT NO.: 192065A DATE: DECEMBER 2017

WSP USA SUITE 200 16200 PARK ROW HOUSTON, TX 77084

TEL: +1 281 589-5900 FAX: +1 281 759-5164 WSP.COM



December 15, 2017

Stephen Jann, UIC Branch Chief United States Environmental Protection Agency, Region 5 77 W. Jackson Blvd. Chicago, IL 60604-359

Subject: Submission of Class I UIC Non-Hazardous Permit Application for Proposed Wells BDW-1 through BDW-5 and Class III Area Permit for Proposed Wells CW-1 through CW-4

Dear Sir:

On the behalf of Buckeye Terminals, LLC, please find the following permit applications for proposed Class 1 non-hazardous injection wells (BDW-1 through BDW-5) and Class III area permit application for proposed cavern wells (CW-1 through CW-4) to be installed at Buckeye Terminals, LLC, Woodhaven Terminal in Wayne County, Michigan. The following is included with this transmittal letter.

- (2) Prints of Class I Non-Hazardous Permit Application for Proposed BDW-1 Through BDW-5
- (2) Prints of Class III Area Permit Application for Proposed Caverns Wells CW-1 through CW-4
- (2) USB Drives Containing PDF Files of Abovementioned Permit Applications, Complete with Bookmarks and Hyperlinks

Kind regards,

Brandon Schulte

BMS/bms

Encl.

cc: Brian Ball, Buckeye Partners L.P.

SIGNATURES

PREPARED BY

Graciela E. Moore, P.G.

Senior Geologist

REVIEWED BY

Brandon Schulte, P.E.

Mgr. Permitting & Well Integrity

PRODUCTION TEAM

CLIENT

Senior Manager

Grant McHardy

Vice President

Brian Ball

WSP

Senior Geologist

Graciela Moore, P.G.

Mgr. Permitting & Well Integrity

Brandon Schulte, P.E.

Drilling Engineer

Tim Jones



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ACRONYMS

AB-LOC

Abandoned Location

AOR

Area of Review

bbls

barrels

bgs

below ground surface.

BHA

Bottom Hole Assembly

BOP

Blowout Preventer

BWOC

Percent of material added to cement

BWOW

Percent of a material added to a cement slurry based on the weight of water

CESQG

Conditionally Exempt Small Quantity Generator

cf/sk

cubic foot per sack

D&A

Dry and Abandoned

EIS

Emissions Inventory System

EPA

Environmental Protection Agency - Region 5

gal/sk

gallons per sack

gpm

gallons per minute

GSTG

Liquified Petroleum Gas Storage - Active

LCM

Solid material introduced into a mud system

md

millidarcy

MD

measured depth

MDEQ

Michigan Department of Environmental Quality

mg/L

milligram per liter

MIT

Mechanical Integrity Test

NPDES

National Pollutant Discharge Elimination System

PPF

pounds per foot

ppg

pounds per gallon

psi

pound per square inch

psi/ft

pound per square inch per foot

psig

pounds per square inch gauge

RCRA

Resource Conservation and Recovery Act

SWDOP

Liquified Petroleum Gas Storage - Plugging Approved

SWPPP

Stormwater Pollution Prevention Plan

TD Total Depth

TDS Total Dissolved Solids

TSDF Hazardous Waste Treatment, Storage, or Disposal Facilities

TVD Total Vertical Depth

UIC Underground Injection Control

USDW Underground Source of Drinking Water

APPLICATION INTRODUCTION

Buckeye Terminals, LLC ("Buckeye") is seeking permit application approval from the Environmental Protection Agency - Region 5 (EPA) Underground Injection Control (UIC) for non-hazardous Class I injection wells (brine disposal wells) to be installed at Buckeye Woodhaven Terminal in Wayne County, Michigan. The five proposed non-hazardous injection wells are to be used for disposal of brine associated with the development and maintenance of below-ground salt cavern hydrocarbon storage wells.

Buckeye Terminals, LLC currently operates a terminal at Woodhaven that uses surface tanks to store gasoline, diesel fuel, and ethanol. Approximately 990,000 barrels (bbls) of tank storage is present at the Woodhaven Terminal. An additional four solution-mined salt cavern hydrocarbon storage wells are proposed for the facility. The salt cavern wells permit application, US EPA UIC Class III Permit Application, is provided in a separate application document. The salt caverns will be developed in the Salina B salt formation by injecting fresh water and producing brine. The five proposed non-hazardous injection wells are to dispose of produced brine during cavern development and any excess brines created through normal cavern operation.

The proposed wells will operate under the UIC program 40 CFR 146.

Enclosed in this permit application are copies of EPA Form 7520-6 completed for each proposed well along with associated attachments. Attachments are keyed to the letter designations indicated in the instructions for EPA Form 7520-6. To ease agency review, the application has been prepared to the format outlined in the EPA Region 5 Permit Application Checklist for Class I Injection Wells in Michigan/Indiana (completed checklist included in Appendix A).

OMB No. 2040-0042 Approval Expires 11/30/2014

Permit Application (Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144) Read Attached Instructions Before Starting For Official Use Only Application approved mo day year mo day year Permit Number Well ID FINDS Number II. Owner Name Buckeye Terminals, LLC Street Address One Greenway Plaza Phone Number (832) 214-6026 Phone Number 20755 West Road	/A			I, EPA ID Number	Agency I.	Protection	ironment	States En	United		edinum injurit san	of Carried		
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A. AREA OF REVIEW

Buckeye Terminals, LLC Woodhaven Terminal is located in south-central Wayne County, Michigan, approximately 15 miles southwest of the city of Detroit. Five injection wells are proposed to be installed at this terminal.

The Area of Review (AOR) is the area surrounding an injection well that is set at a minimum fixed radius of 2 miles for non-hazardous wells. Well data available from public records within the AOR are tabulated in Table A-1 (non-freshwater) and Table A-2 (freshwater). Twenty-three (23) non-freshwater wells and eight freshwater wells were identified within the AOR. The non-freshwater wells include:

- Active liquefied petroleum gas storage 8 wells;
- Gas storage (plugging approved) 8 wells;
- Brine disposal 1 well;
- Dry and abandoned 4 wells; and
- Abandoned locations 2 wells.

The above wells include active storage caverns at the site operated by Marathon Oil Co. (five storage caverns, one disposal well, and three brine recovery wells). The storage caverns at the site formerly operated by Phillips Petroleum Co. (two caverns and one brine disposal well) and Mobil Oil Co. (four caverns and two brine disposal wells), but have since been plugged and abandoned.

Two of the wells reviewed within the AOR penetrate the top of the confining zone, Utica-Trenton, which is projected to occur at a depth of approximately 2,060 feet below ground surface (bgs). Well API # 21163004199000 is listed as dry and abandoned. Well API #21163001468000 is a salt water disposal well operated by Marathon Pipe Line LLC (original operator Marathon Oil Co). A geophysical log recorded downhole in Well API #21163001468000 is shown on the cross section provided on Figures F-4 and F-5 in Attachment F. As demonstrated in Attachment C, no corrective action is necessary for this site.

Surrounding wells, with the exception of shallow monitoring wells and borings; are shown on the map provided in Attachment B.

List of Tables in Attachment A

Table A-1 Non-Freshwater (Oil and Gas) Wells in Area of Review

Table A-2 Freshwater Wells in 2-Mile Area of Review